

The opinion in support of the decision being entered today was not written
for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

MAILED

JUL 26 2005

U.S. PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RALPH K. ITO

Appeal No. 2005-1261
Application No. 09/400,034

ON BRIEF

Before FRANKFORT, McQUADE and NASE, Administrative Patent Judges.
NASE, Administrative Patent Judge.

DECISION ON APPEAL

Ralph K. Ito takes this appeal from the final rejection (mailed July 2, 2003) of claims 1 through 10 and 53 through 63. Claims 14 through 27 have been cancelled. Claims 11 through 13 and 28 through 52 have been withdrawn from consideration.

We AFFIRM-IN-PART.

THE INVENTION

The appellant's invention relates to an apparatus that prepares fluid samples by using a sample aliquot pipette tip ("SAT") and a tip aliquot support ("TAS") (specification, page 3). Claim 1, the only independent claim on appeal, reads as follows:

An apparatus for preparing a fluid sample, the apparatus comprising:

- a) a first part including
 - i) a pipette tip having an open tip end, and
 - ii) a sample cup, fluidly coupled with the pipette tip and having an open end; and
- b) a second part including
 - i) channel for receiving the pipette tip of the first part,
 - ii) a support for accommodating at least a portion of the sample cup of the first part, and
 - iii) a constricted passage, arranged between the channel and the support, for collapsing the pipette tip of the first part as the first part is inserted into the second part.

THE PRIOR ART

The sole reference relied on by the examiner to support the final rejection is:

Ruediger et al. (Ruediger)

6,432,366

Aug. 13, 2002

THE REJECTION

Claims 1 through 10 and 53 through 63 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Ruediger.

Attention is directed to the main and reply briefs (filed December 5, 2003 and April 30, 2004) and the answer (mailed February 27, 2004) for the respective positions of the appellant and examiner regarding the merits of the rejection.

DISCUSSION

Anticipation under 35 U.S.C. § 102 requires that each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. If the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if that element is "inherent" in its disclosure. To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. See In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

Teachings of Ruediger

Ruediger's invention relates to "apparatus for combinatorial drug research to be used in the simultaneous parallel solid and solution phase synthesis of large numbers of diverse organic compounds or for the final cleavage step of radio frequency tagged

synthesis and more particularly to a modular apparatus designed for such purposes which employs a unique pinch valve block ..." (col. 1, lines 9-17).

The apparatus of Ruediger's invention relates to a modular system for the synthesis of diverse organic compounds in which components in the form of blocks and/or plates are stacked to form reactors which can be moved among work stations to perform various steps in the synthesis. As shown in Figure 1, a typical reactor consists of a reactor block, generally designated A, which is adapted to retain a plurality of tube-like reactor vessels 10; an optional temperature control block, generally designated B; and a valve block, generally designated C, which controls the discharge from reactor vessels 10 into the collection vessels situated in the wells 12 of a microtiter plate which forms a portion of a collection block, generally designated D.

Reactor block A includes a pressure plate 14 with a septum 16 situated adjacent its undersurface. Pressure plate 14 has an array of relatively small openings 17, one for each vessel 10. Openings 17 permit the needle of a syringe to be inserted into the aligned reactor vessel, through the septum, to introduce liquids into the vessel. When the temperature control block B is absent, as shown in Figure 2, an alignment plate 18 is situated below septum 16. Alignment plate 18 has an array of openings 19 each of which receives a reactor vessel 10 so as to retain the vessels in the correct position

relative to the pressure plate. Pressure plate 14 is spaced from valve block C so as to permit a plurality of reactor vessels 10 to be situated therebetween.

Valve block C is illustrated in exploded form in Figures 4 and 9. This block consists of a top plate 39, a bottom plate 40 and an end cap 42 which, when assembled, define a rectangular cavity into which a slide 44 is moveably received. Top plate 39 has an array of small holes 52 adapted to receive the outlet tubes 54 which are attached by Luer tip adapters 56 to the bottom outlet ports of the reactor vessels 10. Bottom plate 40 has corresponding holes 58 for receiving the tubes 54. Slide 44 also has an array of holes 64 of the same number and location as holes 52 and holes 58. However, as best seen in Figure 9, the top and bottom of each hole 64 is flared outwardly such that conic sections are formed adjacent the top and bottom surfaces of slide 44 so as not to cut or permanently distort tubes 54.

The bottom surface of slide 44 is recessed and provided with eight downwardly extending ribs 66. Each rib 66 is aligned with a different rib 62 on bottom plate 40. Between each set of aligned ribs 66, 62 is situated a row of outlet tubes 54. Movement of slide 44 relative to bottom plate 40 causes ribs 66 to move towards ribs 62 such that the outlet tubes are pinched closed, compare Figures 5 to 8. As is best seen in Figures 6 and 8, the surface of rib 66 does not act directly on the walls of the outlet tubes 54.

Instead, it acts through a resilient member 68. Member 68 is formed of a sections of Teflon encapsulated silicone O-ring cord. Member 68 deforms as ribs 66 and 62 are moved toward each other and pinches tubes 54 as seen in Figures 7 and 8 in a manner which does not crush or permanently deform the wall of the tube. Thus, the tube reliably returns to its original shape when the slide returns to its original position, as seen in Figures 5 and 6.

Each end of bottom plate 40 is provided with a plurality of holes 71 each of which is aligned with the space between a different set of ribs 62, 66. Holes 71 extend to the exterior surface of the plate and have a diameter slightly larger than that of the resilient members 68. Holes 71 permit resilient members 68 to be inserted between the ribs 62, 66 after the valve block has been assembled. Holes 71 may be capped or stopped after the resilient members are inserted.

Movement of slide 44 relative to plates 39 and 40 is achieved through the use of end cap 42. End cap 42 has openings 70 to accommodate screws for securing it to bottom and top plates. It also has a central opening 72 through which a threaded screw 74 with a knob 76 extends. The inner diameter of opening 72 is larger then the outer diameter of screw 74 such that screw 74 can rotate freely within opening 72. Screw 74 engages an internally threaded opening 78 in slide 44 such that rotation of screw 74 in

a clockwise direction causes slide 44 to move relative to bottom plate 40 such that ribs 66 move towards ribs 62 to close the rows of outlet tubes simultaneously. Rotating screw 74 in the counter-clockwise direction moves the slide to the extreme open position, as shown in Figures 5 and 6 such that discharge of fluids through outlet tubes 54 is unimpeded. Overtightening of the plates and crushing or deformation of the tubes is prevented by this structure while complete closure of all tubes is insured when the valve is closed (Figure 8).

Claim 1

We sustain the rejection of claim 1 under 35 U.S.C. § 102(e).

Independent claim 1 recites an apparatus for preparing a fluid sample comprising a first part and a second part. The first part includes, inter alia, a pipette tip and a sample cup. The second part includes, inter alia, a channel, a support and a constricted passage for collapsing the pipette tip as the first part is inserted into the second part.

In rejecting claim 1, the examiner stated (answer, p. 4) that:

Ruediger et al disclose a first part including a pipette tip 54 having an open tip end, a sample cup 10, 56 fluidly coupled with the pipette tip and having an open end, and a second part including a channel (e.g., defined by parts 40 44) for receiving the pipette tip of the first part, a support (e.g., defined by part 39) for

accommodating at least a portion of the sample cup, and a constricted passage (e.g., defined by parts 62 and 68) arranged between the channel and support and being capable of collapsing the pipette tip as the first part is inserted into the second part in any of three modes as follows: 1) collapsing part 54 between parts 62 and 68 after it has been fully received within parts 39, 40, and 44 as shown in FIG. 8; 2) partially inserting part 54 into parts 39, 40, and 44, collapsing the tube between parts 62 and 68, and then fully axially inserting part 54 into parts 39, 40, and 44; [3]) partially or fully closing the gap between parts 62 and 68 with the screw operated adjustment mechanism 42 shown in FIG. 1 followed by fully axially inserting part 54 into parts 39, 40, and 44.

Thus, according to the examiner, Ruediger inherently discloses "setting the gap between parts 62 and 68 to that required to normally collapse the tube followed by fully axially inserting part 54 into parts 39, 40, and 44" (answer, p. 6).

The appellant argues (brief, pp. 7-13; reply brief, pp. 2-4) that independent claim 1 is not anticipated by Ruediger because Ruediger does not teach a constricted passage, arranged between a channel and a support, for collapsing a pipette tip of a first part **as the first part is inserted into the second part**. The appellant asserts that Ruediger would need to be adjusted in order to perform like appellant's apparatus and that this is insufficient to support an anticipation rejection (brief, p. 10).

Ruediger explicitly discloses a first position of the slide 44 (see Figure 6) in which the tubes 54 are not collapsed but are capable of being withdrawn from the valve block C and inserted into the valve block C. Ruediger also explicitly discloses a second position of the slide 44 (see Figure 8) in which the tubes 54 are fully collapsed. In this

second position, Ruediger does not explicitly disclose that the tubes 54 are capable of being withdrawn from the valve block C or inserted into the valve block C. Additionally, it is not inherent in this second position that the tubes 54 are capable of being withdrawn from the valve block C or inserted into the valve block C since it would be sheer speculation that the relative stiffness of the various parts (e.g., tubes 54, members 68) would permit the tubes 54 to be withdrawn from the valve block C or inserted into the valve block C.

Ruediger implicitly discloses a multitude of positions of the slide 44 as it is moved by rotation of knob 76 from the first position (see Figure 6) to the second position (see Figure 8) and vice versa. In many of the possible positions of slide 44, the tubes 54 would be partially collapsed by the members 68. In our opinion, it is inherent that at one or more of those many positions immediately following initial contact of the tubes 54 by the members 68 that the tubes 54 would be partially collapsed by the members 68 to only a small degree and thereby permit the tubes 54 to be withdrawn from the valve block C and then reinserted back into the valve block C. As such, in that position, the structure of Ruediger defines a constricted passage inherently capable of collapsing the pipette tip of the first part as the first part is inserted into the second part, as set forth in claim 1 on appeal. Thus, the appellant's arguments do not persuade us that claim 1 is novel.

For the reasons set forth above, the decision of the examiner to reject independent claim 1 under 35 U.S.C. § 102(e) is affirmed.

Claims 2, 3 and 5 through 8

The appellant has grouped claims 1 through 3 and 5 through 8 as standing or falling together. Accordingly, claims 2, 3 and 5 through 8 fall with claim 1. Thus, it follows that the decision of the examiner to reject claims 2, 3 and 5 through 8 under 35 U.S.C. § 102(e) is also affirmed.

Claims 4 and 55 through 63

We will not sustain the rejection of claims 4 and 55 through 63 under 35 U.S.C. § 102(e).

Dependent claim 4 recites that, as the first part is inserted into the second part, the walls making up the pipette tip collapse inwardly and form a liquid seal. In rejecting claim 4, the examiner found that Ruediger discloses "an arrangement capable as [sic, of] functioning as recited in the claim" (answer, p. 4). According to the examiner, Ruediger inherently discloses the capability to form a liquid seal by collapsing the wall of the pipette tip inwardly. Ruediger actually teaches that "complete closure of all tubes," i.e., pipette tips, is possible by rotating the knob 76 clockwise (column 10, lines

52 through 55), which would presumably form a liquid seal. However, Ruediger does not teach how the tubes 54, i.e., pipette tips, in the completely closed state could be forced past members 68, which are made of Teflon and in the compressed configuration seen in Figure 8 of Ruediger. As set forth above, it is not inherent in the second position that the tubes 54 are capable of being withdrawn from the valve block C or inserted into the valve block C since it would be sheer speculation that the relative stiffness of the various parts (e.g., tubes 54, members 68) would permit the tubes 54 to be withdrawn from the valve block C or inserted into the valve block C. Thus, Ruediger does not teach the claimed liquid seal because the tubes 54 are not taught, explicitly or inherently, to be capable of passing by the fully displaced members 68 (i.e., the second position shown in Figure 8). Therefore, the examiner's position is unsound.

Dependent claims 55 through 63 recite, inter alia, that the wall defining the pipette tip collapse inwardly to form a liquid seal. In rejecting claims 55 through 63, the examiner found that Ruediger is inherently capable of functioning as recited in the claims (answer, p. 10). As was the case for claim 4 above, the examiner's position here is untenable. For the reasons stated above for claim 4, Ruediger does not teach the claimed liquid seal.

For the reasons set forth above, the decision of the examiner to reject claims 4 and 55 through 63 under 35 U.S.C. § 102(e) is reversed.

Claims 9 and 10

We will not sustain the rejection of claims 9 and 10 under 35 U.S.C. § 102(e).

Dependent claim 9 recites that the support for accommodating at least a portion of the sample cup of the first part is shaped as a funnel. Dependent claim 10 recites that the support for accommodating at least a portion of the sample cup of the first part is tapered. In rejecting claims 9 and 10, the examiner found that "parts 39 and 44 together form a support that accommodates a portion of the sample cup with part 44 defining the funnel recited in claim 9 and that forms the tapered portion recited in claim 10" (answer, p. 9).

The examiner's position here is untenable since slide 44 of Ruediger does not accommodate at least a portion of the sample cup. In the above-quoted rejection of claim 1, the examiner determined that the claimed sample cup was readable on Ruediger's vessel 10 and Leur tip adapter 56. As shown in Figures 6 and 8 of Ruediger, slide 44 of Ruediger does not accommodate any portion of Ruediger's vessel 10 or Leur tip adapter 56. While top plate 39 of Ruediger does accommodate a portion

of Ruediger's Leur tip adapter 56, top plate 39 is not shaped as a funnel or tapered.

Accordingly, Ruediger does not teach the subject matter of claims 9 and 10.

For the reasons set forth above, the decision of the examiner to reject claims 9 and 10 under 35 U.S.C. § 102(e) is reversed.

Claim 53

We will not sustain the rejection of claim 53 under 35 U.S.C. § 102(e).

Dependent claim 53 recites that the pipette tip is tapered. In rejecting claim 53, the examiner found that "pipette 54 is tapered since it includes a tapered portion between an upper larger diameter part receiving a lower end of part 56 and a lower smaller diameter part that is received within the constricted passage" (answer, p. 9).

The appellant's response to this position of the examiner (reply brief, p. 5) is that:

Apparently, the Examiner is referring to the cross section of FIG. 8 of the Ruediger patent. As the quoted language of the Examiner's argument shows, the Examiner is ignoring the term "tip" in the phrase "pipette tip". The ordinary meaning of tip is the end of an object, especially a pointed or projecting object. A portion of element 54 in the Ruediger patent that is "between" an upper part and a lower part is clearly not a tip.

In our view, the recitation in claim 53 that "the pipette tip is tapered" requires the entire pipette tip to be tapered not just a portion of the pipette tip. Only an upper

portion of Ruediger's tubes 54 are tapered as shown in Figure 8. Thus, Ruediger's tubes 54 are not responsive to the requirement in claim 53 of a tapered pipette tip.

For the reasons set forth above, the decision of the examiner to reject claim 53 under 35 U.S.C. § 102(e) is reversed.

Claim 54

We will not sustain the rejection of claim 54 under 35 U.S.C. § 102(e).

Dependent claim 54 recites that the constricted passage has a fixed cross section. In rejecting claim 54, the examiner found that Ruediger discloses "a constricted passage with a fixed cross section (e.g., once the position of slide 44 carrying tube 68 defining one side of the constricted passage has been set as described on lines 11-55 of col. 10)."

The examiner's position here is unsound. Clearly, through the use of knob 76, Ruediger teaches that the constricted passage is adjustable. As such, the cross section of the constricted passage is not fixed. While, the constricted passage may be held in place indefinitely (e.g., the second position shown in Figure 8), this does not

make the cross section of the constricted passage fixed since it is capable of being adjusted via knob 76.

For the reasons set forth above, the decision of the examiner to reject claim 54 under 35 U.S.C. § 102(e) is reversed.

SUMMARY

The decision of the examiner to reject claims 1 through 10 and 53 through 63 under 35 U.S.C. § 102(e) is affirmed with respect to claims 1 through 3 and 5 through 8 and reversed with respect to claims 4, 9, 10 and 53 through 63.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART



CHARLES E. FRANKFORT
Administrative Patent Judge

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) BOARD OF PATENT
) APPEALS
) AND
) INTERFERENCES
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JEFFREY V. NASE
Administrative Patent Judge

McQUADE, Administrative Patent Judge, dissenting-in-part.

As Ruediger fails to disclose, either expressly or under principles of inherency, each and every element of the invention recited in independent claim 1, the examiner's 35 U.S.C. § 102(e) rejection of claim 1, and dependent claims 2 through 10 and 53 through 63, should be reversed in its entirety.

In rejecting claim 1 as being anticipated by Ruediger, the examiner reads the claim limitations relating to the pipette tip on Ruediger's outlet tubes 54 and the claim limitations relating to the constricted passage on the spaces between Ruediger's ribs 62 and resilient members 68 through which the outlet tubes respectively extend. The ribs 62 and resilient members 68 comprise components of a pinch valve block C which are movable between a first position (see Figure 6) wherein the outlet tubes are unimpeded by the ribs 62 and resilient members 68 and a second position (see Figure 8) wherein the outlet tubes are pinched closed by the ribs 62 and resilient members 68.

Within the context of the assembled apparatus disclosed by Ruediger, the outlet tubes 54 occupy the spaces between the ribs 62 and resilient members 68 and are longitudinally fixed relative thereto. Hence, the ribs 62 and resilient members 68 do not

meet, either expressly or under principles of inherency, the functional language¹ in claim 1 requiring the constricted passage to be "for collapsing the pipette tip of the first part as the first part is inserted into the second part." The majority's determination to the contrary (see pages 8 and 9, supra) rests in large part on the proposition that the outlet tubes 54 can be withdrawn and inserted into the valve block C when the ribs 62 and resilient members 68 are in certain intermediate positions. For this to be so, however, the apparatus would have to be at least partially disassembled and the ribs 62 and resilient members set at an intermediate position. The need for such modification of the Ruediger apparatus to meet the terms of claim 1 belies any finding of anticipation. In this regard, while it is true that Ruediger describes the apparatus as a modular construction, the reference contains no disclosure that the ribs 62 and resilient members 68 are in an intermediate position at any point during the assembly or disassembly process wherein the outlet tubes are capable of being inserted into or withdrawn from the valve block C. The majority's analysis is further flawed in that it assumes without factual support that Ruediger's ribs 62 and resilient members 68, when in at least some intermediate positions, would inherently collapse the outlet tubes 54 when the tubes are inserted therebetween. Given the admitted lack of detail in Ruediger's description of the pertinent physical characteristics (e.g., stiffness) of the

¹ Functional language in a claim defines something by what it does rather than by what it is. In re Swinehart, 439 F.2d 210, 213, 169 USPQ 226, 228 (CCPA 1971).

outlet tubes 54 and resilient members 68, the majority's position here is unduly conjectural.



JOHN P. McQUADE
Administrative Patent Judge

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